

## **Grenada Manufacturing**

### **Data Review**

GRENADA, MISSISSIPPI

Volatile Analysis

SDG #1509512

Analyses Performed By:  
Eurofins Air Toxics Ltd.  
Folsom, California

Report: #24462R  
Review Level: Tier III  
Project: LA003307.0001.00007

## SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #1509512 for samples collected in association with the Grenada Manufacturing site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PCB	MET	MISC
1-AA(092215)	1509512-01	Air	9/22/2015		X				
2-AA(092215)	1509512-02	Air	9/22/2015		X				
6-IA(092215)	1509512-03	Air	9/22/2015		X				
1-IA(092215)	1509512-04	Air	9/22/2015		X				
5-IA(092215)	1509512-05	Air	9/22/2015		X				
2-IA(092215)	1509512-06	Air	9/22/2015		X				
3-IA(092215)	1509512-07	Air	9/22/2015		X				
4-IA(092215)	1509512-08	Air	9/22/2015		X				

## ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Sample receipt condition		X		X	
Requested analyses and sample results		X		X	
Collection Technique (grab, composite, etc.)		X		X	
Methods of analysis		X		X	
Reporting limits		X		X	
Sample collection date		X		X	
Laboratory sample received date		X		X	
Sample preservation verification (as applicable)		X		X	
Sample preparation/extraction/analysis dates		X		X	
Fully executed Chain-of-Custody (COC) form completed		X		X	
Narrative summary of QA or sample problems provided		X		X	
Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

## INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
  - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
  - UB Compound considered non-detect at the listed value due to associated blank contamination.
  - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

## VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

### 1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
EPA TO-15 and EPA TO-15-SIM	Air	30 days from collection to analysis	Ambient Temperature	< -1" Hg

All samples met return canister pressure criteria and were analyzed within the specified holding time.

### 2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

### 3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 24-hour tune clock.

System performance and column resolution were acceptable.

### 4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

#### 4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

## 4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
1-AA(092215) 2-AA(092215) 6-IA(092215) 1-IA(092215) 5-IA(092215) 2-IA(092215) 3-IA(092215) 4-IA(092215)	ICAL %RSD	1,2,4-Trimethylbenzene	32.9%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01 <sup>1</sup>	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01 <sup>1</sup>	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 30%	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >30% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >30% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

<sup>1</sup> RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketenes, 1,4-dioxane, etc.)

## 5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the established acceptance limits of 70% to 130%.

All surrogate recoveries were within control limits.

## **6. Internal Standard Performance**

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 40% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

## **7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis**

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the established acceptance limits of 70% to 130%.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

## **8. Laboratory Duplicate Analysis**

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for air matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for air matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

## **9. Field Duplicate Analysis**

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 100% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for air matrices.

A field duplicate was not performed on a sample location within this SDG.

## **10. Compound Identification**

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

## **11. System Performance and Overall Assessment**

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

## DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15	Reported		Performance Acceptable		Not Required	
	No	Yes	No	Yes		
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
<b>Tier II Validation</b>						
Canister return pressure (<-1"Hg)		X		X		
Holding times		X		X		
Reporting limits (units)		X		X		
Blanks						
A. Method blanks		X		X		
B. Equipment blanks					X	
C. Trip blanks					X	
Laboratory Control Sample (LCS)		X		X		
Laboratory Control Sample Duplicate(LCSD)		X		X		
LCS/LCSD Precision (RPD)		X		X		
Field/Lab Duplicate (%D)					X	
Surrogate Spike Recoveries		X		X		
Dilution Factor		X		X		
Moisture Content					X	
<b>Tier III Validation</b>						
System performance and column resolution		X		X		
Initial calibration %RSDs		X	X			
Continuing calibration RRFs		X		X		
Continuing calibration %Ds		X		X		
Instrument tune and performance check		X		X		
Ion abundance criteria for each instrument used		X		X		
Internal standard		X		X		
Compound identification and quantitation						
A. Reconstructed ion chromatograms		X		X		
B. Quantitation Reports		X		X		
C. RT of sample compounds within the established RT windows		X		X		
D. Transcription/calculation errors present				X		
E. Reporting limits adjusted to reflect sample dilutions		X		X		

VOCs: TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

%RSD    Percent relative difference  
 %R      Percent recovery  
 RPD     Relative percent difference  
 %D      Percent difference

VALIDATION PERFORMED BY: Jennifer Singer

SIGNATURE:

A handwritten signature in cursive script, appearing to read "Jennifer Singer", written in black ink on a white background.

DATE: November 2, 2015

PEER REVIEW BY: Dennis Capria

DATE: November 4, 2015

## **CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs**



Air Toxics

## Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

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Collected by: (Print and Sign)

R. Woodruff / M. Head

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## Project Info:

P.O. #

IN00899.2013

Project #

IN00899.2013

Project Name

Greenway Manufacturing

Turn Around Time:

☒ Normal☐ Rush

specify

Lab Use Only

Pressurized by:

Date:

Pressurization Gas:

N<sub>2</sub> He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	1-AA (092215)	6L1237	9-22-15	1044-1043	TO-15, Project List	30	9		
02A	2-AA (092215)	5L34325	9-22-15	1612-1617	TO-15, Project List	30	7.25		
03A	6-IA (092215)	308400	9-22-15	1105-1058	TO-15, Project List	30	7.5		
04A	1-IA (092215)	34481	9-22-15	1206-1202	TO-15, Project List	30	30.5		
<del>05A 1-Dup IA (092215) 34481 9-22-15 1206-1202 TO-15, Project List 30 30</del>									
05A	5-IA (092215)	35166	9-22-15	1303-1305	TO-15, Project List	30	9.5		
06A	2-IA (092215)	34356	9-22-15	1417-1408	TO-15, Project List	30	7.5		
07A	3-IA (092215)	33980	9-22-15	1533-1533	TO-15, Project List	30	7		
08A	4-IA (092215)	33877	9-22-15	1647-1647	TO-15 Project List	30	7		

Relinquished by: (signature) Date/Time

M. Head 9-24-15 1500

Received by: (signature) Date/Time

Candice Hartney 9/30/15

Notes:

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

Lab Use Only

Shipper Name

Fedex

Air Bill #

Temp (°C)

N/A

Condition

Good

Custody Seals Intact?

☒ Yes☐ No☐ None

Work Order #

1509512



Air Toxics

Client Sample ID: 1-AA(092215)

Lab ID#: 1509512-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100507	Date of Collection:	9/23/15 10:43:00 AM
Dil. Factor:	1.91	Date of Analysis:	10/5/15 01:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.38	Not Detected	1.3	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected <span>UU</span>	0.94	Not Detected <span>UU</span>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: 1-AA(092215)

Lab ID#: 1509512-01B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100507sim	Date of Collection: 9/23/15 10:43:00 AM
Dil. Factor:	1.91	Date of Analysis: 10/5/15 01:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	0.040	0.049	0.10
1,1-Dichloroethene	0.019	Not Detected	0.076	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.038	0.21	0.15	0.85
Chloroform	0.038	Not Detected	0.19	Not Detected
Benzene	0.096	0.095 J	0.30	0.30 J
1,2-Dichloroethane	0.038	Not Detected	0.15	Not Detected
Trichloroethene	0.038	0.22	0.20	1.2
Toluene	0.038	0.18	0.14	0.66
1,1,2-Trichloroethane	0.038	Not Detected	0.21	Not Detected
Tetrachloroethene	0.038	Not Detected	0.26	Not Detected
Ethyl Benzene	0.038	Not Detected	0.16	Not Detected
m,p-Xylene	0.076	0.12	0.33	0.52
o-Xylene	0.038	0.066	0.16	0.29

J = Estimated value.

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: 2-AA(092215)

Lab ID#: 1509512-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100508	Date of Collection:	9/23/15 4:17:00 PM
Dil. Factor:	1.83	Date of Analysis:	10/5/15 02:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected <span>UU</span>	0.90	Not Detected <span>UU</span>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	93	70-130

Client Sample ID: 2-AA(092215)

Lab ID#: 1509512-02B

## MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100508sim	Date of Collection: 9/23/15 4:17:00 PM
Dil. Factor:	1.83	Date of Analysis: 10/5/15 02:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	0.018 J	0.047	0.046 J
1,1-Dichloroethene	0.018	Not Detected	0.072	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.72	Not Detected
cis-1,2-Dichloroethene	0.037	0.17	0.14	0.67
Chloroform	0.037	Not Detected	0.18	Not Detected
Benzene	0.092	0.099	0.29	0.32
1,2-Dichloroethane	0.037	Not Detected	0.15	Not Detected
Trichloroethene	0.037	0.19	0.20	1.0
Toluene	0.037	0.24	0.14	0.89
1,1,2-Trichloroethane	0.037	Not Detected	0.20	Not Detected
Tetrachloroethene	0.037	Not Detected	0.25	Not Detected
Ethyl Benzene	0.037	0.054	0.16	0.24
m,p-Xylene	0.073	0.19	0.32	0.83
o-Xylene	0.037	0.083	0.16	0.36

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: 6-IA(092215)

Lab ID#: 1509512-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100509	Date of Collection:	9/23/15 10:58:00 AM
Dil. Factor:	4.38	Date of Analysis:	10/5/15 03:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.88	Not Detected	3.0	Not Detected
1,2,4-Trimethylbenzene	0.44	Not Detected <b>UU</b>	2.2	Not Detected <b>UU</b>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: 6-IA(092215)

Lab ID#: 1509512-03B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100509sim	Date of Collection: 9/23/15 10:58:00 AM
Dil. Factor:	4.38	Date of Analysis: 10/5/15 03:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.044	Not Detected	0.11	Not Detected
1,1-Dichloroethene	0.044	Not Detected	0.17	Not Detected
trans-1,2-Dichloroethene	0.44	Not Detected	1.7	Not Detected
cis-1,2-Dichloroethene	0.088	0.097	0.35	0.38
Chloroform	0.088	0.12	0.43	0.56
Benzene	0.22	Not Detected	0.70	Not Detected
1,2-Dichloroethane	0.088	Not Detected	0.35	Not Detected
Trichloroethene	0.088	0.12	0.47	0.65
Toluene	0.088	1.0	0.33	3.9
1,1,2-Trichloroethane	0.088	Not Detected	0.48	Not Detected
Tetrachloroethene	0.088	Not Detected	0.59	Not Detected
Ethyl Benzene	0.088	0.14	0.38	0.63
m,p-Xylene	0.18	0.49	0.76	2.1
o-Xylene	0.088	0.23	0.38	1.0

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: 1-IA(092215)

Lab ID#: 1509512-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100510	Date of Collection:	9/23/15 12:02:00 PM
Dil. Factor:	4.58	Date of Analysis:	10/5/15 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.92	Not Detected	3.2	Not Detected
1,2,4-Trimethylbenzene	0.46	Not Detected <b>UU</b>	2.2	Not Detected <b>UU</b>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: 1-IA(092215)

Lab ID#: 1509512-04B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100510sim	Date of Collection: 9/23/15 12:02:00 PM
Dil. Factor:	4.58	Date of Analysis: 10/5/15 04:24 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.046	Not Detected	0.12	Not Detected
1,1-Dichloroethene	0.046	Not Detected	0.18	Not Detected
trans-1,2-Dichloroethene	0.46	Not Detected	1.8	Not Detected
cis-1,2-Dichloroethene	0.092	0.15	0.36	0.61
Chloroform	0.092	0.15	0.45	0.75
Benzene	0.23	1.2	0.73	3.8
1,2-Dichloroethane	0.092	0.21	0.37	0.84
Trichloroethene	0.092	0.20	0.49	1.1
Toluene	0.092	1.4	0.34	5.4
1,1,2-Trichloroethane	0.092	Not Detected	0.50	Not Detected
Tetrachloroethene	0.092	Not Detected	0.62	Not Detected
Ethyl Benzene	0.092	0.23	0.40	1.0
m,p-Xylene	0.18	0.59	0.80	2.6
o-Xylene	0.092	0.22	0.40	0.95

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: 5-IA(092215)

Lab ID#: 1509512-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100511	Date of Collection:	9/23/15 1:05:00 PM
Dil. Factor:	1.91	Date of Analysis:	10/5/15 05:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.38	0.59	1.3	2.0
1,2,4-Trimethylbenzene	0.19	Not Detected UJ	0.94	Not Detected UJ

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: 5-IA(092215)

Lab ID#: 1509512-05B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100511sim	Date of Collection: 9/23/15 1:05:00 PM
Dil. Factor:	1.91	Date of Analysis: 10/5/15 05:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.019	0.024	0.049	0.062
1,1-Dichloroethene	0.019	Not Detected	0.076	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.76	Not Detected
cis-1,2-Dichloroethene	0.038	0.16	0.15	0.65
Chloroform	0.038	0.044	0.19	0.21
Benzene	0.096	0.27	0.30	0.86
1,2-Dichloroethane	0.038	0.044	0.15	0.18
Trichloroethene	0.038	0.16	0.20	0.86
Toluene	0.038	0.70	0.14	2.6
1,1,2-Trichloroethane	0.038	Not Detected	0.21	Not Detected
Tetrachloroethene	0.038	Not Detected	0.26	Not Detected
Ethyl Benzene	0.038	0.12	0.16	0.55
m,p-Xylene	0.076	0.37	0.33	1.6
o-Xylene	0.038	0.13	0.16	0.56

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: 2-IA(092215)

Lab ID#: 1509512-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100512	Date of Collection:	9/23/15 2:08:00 PM
Dil. Factor:	4.38	Date of Analysis:	10/5/15 06:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.88	Not Detected	3.0	Not Detected
1,2,4-Trimethylbenzene	0.44	Not Detected <b>UJ</b>	2.2	Not Detected <b>UJ</b>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: 2-IA(092215)

Lab ID#: 1509512-06B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100512sim	Date of Collection: 9/23/15 2:08:00 PM
Dil. Factor:	4.38	Date of Analysis: 10/5/15 06:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.044	Not Detected	0.11	Not Detected
1,1-Dichloroethene	0.044	Not Detected	0.17	Not Detected
trans-1,2-Dichloroethene	0.44	Not Detected	1.7	Not Detected
cis-1,2-Dichloroethene	0.088	0.14	0.35	0.57
Chloroform	0.088	0.19	0.43	0.91
Benzene	0.22	0.25	0.70	0.81
1,2-Dichloroethane	0.088	1.7	0.35	7.0
Trichloroethene	0.088	0.20	0.47	1.1
Toluene	0.088	2.1	0.33	7.9
1,1,2-Trichloroethane	0.088	Not Detected	0.48	Not Detected
Tetrachloroethene	0.088	Not Detected	0.59	Not Detected
Ethyl Benzene	0.088	0.20	0.38	0.85
m,p-Xylene	0.18	0.43	0.76	1.9
o-Xylene	0.088	0.25	0.38	1.1

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: 3-IA(092215)

Lab ID#: 1509512-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100513	Date of Collection:	9/23/15 3:33:00 PM
Dil. Factor:	17.5	Date of Analysis:	10/5/15 06:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	3.5	Not Detected	12	Not Detected
1,2,4-Trimethylbenzene	1.8	Not Detected <span>UU</span>	8.6	Not Detected <span>UU</span>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: 3-IA(092215)

Lab ID#: 1509512-07B

## MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100513sim	Date of Collection:	9/23/15 3:33:00 PM
Dil. Factor:	17.5	Date of Analysis:	10/5/15 06:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
trans-1,2-Dichloroethene	1.8	Not Detected	6.9	Not Detected
cis-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Chloroform	0.35	0.86	1.7	4.2
Benzene	0.88	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.35	Not Detected	1.4	Not Detected
Trichloroethene	0.35	Not Detected	1.9	Not Detected
Toluene	0.35	1.5	1.3	5.6
1,1,2-Trichloroethane	0.35	Not Detected	1.9	Not Detected
Tetrachloroethene	0.35	Not Detected	2.4	Not Detected
Ethyl Benzene	0.35	Not Detected	1.5	Not Detected
m,p-Xylene	0.70	Not Detected	3.0	Not Detected
o-Xylene	0.35	Not Detected	1.5	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: 4-IA(092215)

Lab ID#: 1509512-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v100514	Date of Collection:	9/23/15 4:47:00 PM
Dil. Factor:	1.79	Date of Analysis:	10/5/15 07:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected <span>UU</span>	0.88	Not Detected <span>UU</span>

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: 4-IA(092215)

Lab ID#: 1509512-08B

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

File Name:	v100514sim	Date of Collection: 9/23/15 4:47:00 PM
Dil. Factor:	1.79	Date of Analysis: 10/5/15 07:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.018	0.031	0.046	0.079
1,1-Dichloroethene	0.018	Not Detected	0.071	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.71	Not Detected
cis-1,2-Dichloroethene	0.036	0.14	0.14	0.58
Chloroform	0.036	0.19	0.17	0.94
Benzene	0.090	0.58	0.28	1.8
1,2-Dichloroethane	0.036	0.30	0.14	1.2
Trichloroethene	0.036	0.18	0.19	0.99
Toluene	0.036	0.72	0.13	2.7
1,1,2-Trichloroethane	0.036	Not Detected	0.20	Not Detected
Tetrachloroethene	0.036	Not Detected	0.24	Not Detected
Ethyl Benzene	0.036	0.10	0.16	0.43
m,p-Xylene	0.072	0.26	0.31	1.1
o-Xylene	0.036	0.13	0.16	0.56

**Container Type: 6 Liter Summa Canister (SIM Certified)**

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130